What is claimed is:

1. A void-maintaining laminate comprising

a) a sheet-like base layer,

said base layer having a lower surface and an upper surface;

b) a plurality of compression elements extending from said upper surface of said base layer,

each of said compression elements comprising a base, a tip located distal to said base, a shaft extending between said base and said tip, a shaft axis having a length measured from said base to said tip, and a neck diameter measured substantially perpendicular to said shaft length at a narrowest portion of said shaft; and

c) a top layer,

said top layer having a permittivity to fluids, and wherein said top layer is attached to a plurality of said compression elements at their respective said tips.

2. The laminate of claim 1, wherein said compression elements are contiguous with said top surface of said base layer.

3. The laminate of claim 1, wherein said compression elements are provided in shapes, and said shapes are selected from one or more of spikes, cones, hollow cones, spindles, convolutions, bubbles, circular cylinders, ovoid cylinders, hollow cylinders, flat-faceted pyramids, arcuate-faceted pyramids, volcano-shaped columns, mushroom-shaped columns, tubes, sphere-topped shafts, and peduncles.

4. The laminate of claim 1, wherein said tips of said compression elements are provided with one or more flattened facets adapted and arranged to provide attachment surfaces for said upper layer.

5. The laminate of claim 1, wherein said compression elements define voids between said top surface of said base layer and said top layer.

6. The laminate of claim 1, wherein said base layer is impermeable to fluids.

7. The laminate of claim 1, wherein voids are provided in said bottom surface of said base layer, said voids being adapted and arranged to correspond in position to said compression elements extending from said upper surface of said base layer.

8. The laminate of claim 1, wherein said top layer comprises one or more of membranes, grids and geotextiles.

9. The laminate of claim 1, wherein said top layer is attached to at least 25% of said tips of said plurality of compression elements.

10. The laminate of claim 1, wherein said top layer is attached to at least 50% of said tips of said plurality of compression elements.

11. The laminate of claim 1, wherein said top layer is attached to at least 80% of said tips of said plurality of compression elements.

12. The laminate of claim 1, wherein said top layer is attached to at least 90% of said tips of said plurality of compression elements.

13. The laminate of claim 1, wherein said top layer is attached to at least 95% of said tips of said plurality of compression elements.

14. The laminate of claim 1, wherein said top layer is attached to said tips of said plurality of compression elements with a bond strength of at least 0.10 lbs/square inch of attachment surface.

15. The laminate of claim 1, wherein the ratio of said shaft length to said neck diameter of said plurality of compression elements is at least 2.0 – 1.0.

16. The laminate of claim 1, wherein the ratio of said shaft length to said neck diameter of said plurality of compression elements is at least 3.0 – 1.0.

17. The laminate of claim 1, wherein the ratio of said shaft length to said neck diameter of said plurality of compression elements is at least 4.0 – 1.0.

18. The laminate of claim 1, wherein the ratio of said shaft length to said neck diameter of said plurality of compression elements is at least 5.0 – 1.0.

19. The laminate of claim 15, wherein said neck diameter is at least 0.5 mm.

20 The laminate of claim 11, wherein said neck diameter is at least 2.0 mm.

21. The laminate of claim 11, wherein said neck diameter is at least 6.0 mm.

22. The laminate of claim 11, wherein said neck diameter is at least 15.0 mm.

23. The laminate of claim 11, wherein said neck diameter is at least 20.0 mm.

24. The laminate of claim 11, wherein said neck diameter is at least 25.0 mm.

25. The laminate of claim 1, wherein said plurality of compression elements are provided on said base layer in a density sufficient to meet desired performance specifications for an intended installation.

26. The laminate of claim 1, wherein said plurality of compression elements are provided on said base layer in a density of at least 1.0 per square inch.

27. The laminate of claim 1, wherein said plurality of compression elements are provided on said base layer in a density of at least 2.0 per square inch.

28. The laminate of claim 1, wherein said plurality of compression elements are provided on said base layer in a density of at least 3.0 per square inch.

29. The laminate of claim 1, wherein said plurality of compression elements are provided on said base layer in a density of at least 4.0 per square inch.

30. The laminate of claim 1, wherein said plurality of compression elements are provided on said base layer in a density of at least 10.0 per square inch.

31. The laminate of claim 1, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 5% of the area of the bottom layer to which they are attached.

32. The laminate of claim 1, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 10% of the area of the bottom layer to which they are attached.

33. The laminate of claim 1, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 15% of the area of the bottom layer to which they are attached.

34. The laminate of claim 1, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 20% of the area of the bottom layer to which they are attached.

35. The laminate of claim 1, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 25% of the area of the bottom layer to which they are attached.

36. The laminate of claim 1, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 50% of the area of the bottom layer to which they are attached.

37. The laminate of claim 5, wherein the average width of said voids defined between said compression elements, said base layer and said top layer is less than the width of said base of said compression elements.

38. The laminate of claim 5, wherein the average width of said voids defined between said compression elements, said base layer and said top layer is more than the width of said base of said compression elements.

39. The laminate of claim 5, wherein the average height of said compression elements is less than the average width of said base of said compression elements.

40. The laminate of claim 5, wherein the average height of said compression elements is more than the average width of said base of said compression elements.

41. The laminate of claim 1, wherein said compression elements are evenly spaced on said base layer in a grid-like pattern.

42. The laminate of claim 1, formed of one or more thermoplastics.

43. The laminate of claim 1, wherein said one or more thermoplastics are selected from the group consisting of polyethylene, high density polyethylene ("HDPE"), polypropylene, glass-filled plastics, and ABS.

44. The laminate of claim 1, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 100 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

45. The laminate of claim 1, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 1,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

46. The laminate of claim 1, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3}

M sec^{-1} of aqueous liquid at a normal load of at least 10,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

47. The laminate of claim 1, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 15,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

48. The laminate of claim 1, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 20,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

49. A method for designing void-maintaining laminates to meet desired specifications, comprising the acts or steps of

A) providing a base layer, said base layer comprising a plurality of compression elements, said compression elements being contiguous with said base layer, and said compression elements comprising CE tips which are

i) located distal to said base layer, and

ii) disposed substantially perpendicular to said base layer;

B) providing a fluid-permeable geotextile top layer, wherein said top layer is attached to a plurality of said CE tips such that said desired specifications are achieved.

50. The method of claim 49, wherein said compression elements are provided in shapes, and said shapes are selected from one or more of spikes, cones, hollow cones, spindles, convolutions, bubbles, circular cylinders, ovoid cylinders, hollow cylinders, flat-faceted pyramids, arcuate-faceted pyramids, volcano-shaped columns, mushroom-shaped columns, tubes, sphere-topped shafts, and peduncles.

51. The method of claim 49, wherein said tips of said compression elements are provided with one or more flattened facets adapted and arranged to provide attachment surfaces for said upper layer.

52. The method of claim 49, wherein said compression elements define voids between said top surface of said base layer and said top layer.

53. The method of claim 49, wherein said base layer is impermeable to fluids.

54. The method of claim 49, wherein voids are provided in said bottom surface of said base layer, said voids being adapted and arranged to correspond in position to said compression elements extending from said upper surface of said base layer.

55. The method of claim 49, wherein said top layer comprises one or more of membranes, grids and geotextiles.

56. The method of claim 49, wherein said top layer is attached to at least 60% of said tips of said plurality of compression elements.

57. The method of claim 49, wherein said top layer is attached to at least 95% of said tips of said plurality of compression elements.

58. The method of claim 49, wherein said top layer is attached to said tips of said plurality of compression elements with a bond strength of at least 0.10 lbs/square inch of attachment surface.

59. The method of claim 49, wherein the ratio of said shaft length to said neck diameter of said plurality of compression elements is at least .5 – 1.0.

60. The method of claim 489 wherein the ratio of said shaft length to said neck diameter of said plurality of compression elements is at least 2.0 – 1.0.

61. The method of claim 49, wherein the ratio of said shaft length to said neck diameter of said plurality of compression elements is at least 4.0 – 1.0.

62. The method of claim 49, wherein said neck diameter is at least .5 mm.

63. The method of claim 49, wherein said neck diameter is at least 3.0 mm.

64. The method of claim 49, wherein said neck diameter is at least 8.0 mm.

65. The method of claim 49 wherein said neck diameter is at least 20.0 mm.

66. The method of claim 49, wherein said neck diameter is at least 25.0 mm.

67. The method of claim 49, wherein said plurality of compression elements are provided on said base layer in a density sufficient to meet desired performance specifications for an intended installation.

68. The method of claim 49, wherein said plurality of compression elements are provided on said base layer in a density of at least 1.0 per square inch.

69. The method of claim 49, wherein said plurality of compression elements are provided on said base layer in a density of at least 4.0 per square inch.

70. The method of claim 49, wherein said plurality of compression elements are provided on said base layer in a density of at least 10.0 per square inch.

71. The method of claim 49, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 5% of the area of the bottom layer to which they are attached.

72. The method of claim 49, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 20% of the area of the bottom layer to which they are attached.

73. The method of claim 49, wherein the percent ratio of the total cross-sectional area of said neck diameters is at least 25% of the area of the bottom layer to which they are attached.

74. The method of claim 49, wherein said compression elements are evenly spaced on said base layer in a grid-like pattern.

75. The method of claim 49, formed of one or more thermoplastics, and wherein said one or more thermoplastics are selected from the group consisting of polyethylene, high density polyethylene ("HDPE"), polypropylene, glass-filled plastics, and ABS.

76. The method of claim 49, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 100 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

77. The method of claim 49, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 1,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

78. The method of claim 49, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 10,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

79. The method of claim 49, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3}

M sec^{-1} of aqueous liquid at a normal load of at least 15,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.

80. The method of claim 49, wherein said base layer, top layer and compression elements are constructed and arranged such that said laminate has a transmissivity of at least 10^{-3} M sec^{-1} of aqueous liquid at a normal load of at least 20,000 PSF (pounds/ft^2) sustainable for at least 100 hours when tested in accordance w/ ASTM 4716.